

CLAIMS

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1. An electromagnetic motor, comprising:
an outer housing having a central axis and opposite end walls;
a shaft rotatably mounted in the housing to extend along the central axis and projecting out through one end wall of the housing;
a plurality of electromagnets extending parallel to the shaft and mounted at spaced intervals in an annular ring centered on the central axis and spaced radially outwardly from the shaft;
an elongate rotor member of ferromagnetic material secured to the shaft and projecting radially outwardly from the shaft in opposite directions to extend up to the annular ring of electromagnets, the rotor having opposite ends located adjacent the ring of electromagnets;
a power supply; and
a switching assembly for connecting the power supply to successive pairs of diametrically opposed electromagnets in order to attract the opposite ends of the rotor to successive activated electromagnets in the ring, whereby the rotor and shaft are rotated in a predetermined direction.
2. The motor as claimed in claim 1, including a speed control device between the power supply and electromagnets in order to control the speed of rotation of the shaft.
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3. The motor as claimed in claim 1, wherein the switch assembly includes a plurality of electrical contacts equal in number to the number of electromagnets, the contacts being arranged in the housing in an annular ring centered on the central axis, and a contact wiper rotatably mounted at the central axis so as to successively contact diametrically opposite contacts in

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the ring, each opposing pair of contacts being electrically connected to a respective opposing pair of electromagnets, and the wiper being connected to the power supply.

4. The motor as claimed in claim 3, wherein the wiper is secured to the shaft.

5. The motor as claimed in claim 1, wherein the outer housing has an inner cylindrical wall and the electromagnets are arranged in said annular ring around the inner wall of the housing.

6. The motor as claimed in claim 1, wherein each electromagnet has a metal core and an outer winding, the metal core having one end projecting out of the winding, and the opposite ends of the rotor are positioned to move in a circular path extending adjacent the projecting ends of the electromagnet cores.